Pre-Calculus Multiple Choice Questions - Chapter S13

1 Louis has been shopping around for a calculator and has decided to buy the scientific method graphing calculator. It has been estimated that the probability a customer will buy the Casio model is 1/9 and the probability that the customer will buy the Texas Instruments model is 4/9. What is the probability that Louis will buy either of these two models?

S13.1

a 5/9 **b** 3/9
c 4/9 **d** 1

2 Mary turns on a television set. Based upon her viewing habits, it is estimated that the probability that the television is on Channel 2 is 1/3 and the probability that it is on channel 7 is 4/13. What is the probability that it is on either Channel 2 or Channel 7?

S13.1

a 4/13 **b** 3/13
c 1/3 **d** 25/39

3 Two dice are rolled. What is the probability that the sum of the dots appearing on both dice together is 9 or 11?

S13.1

a 1/3 **b** 1/2
c 1/6 **d** 5/6

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1 The probability that any member of the Hamilton Bay Ensemble plays a guitar is 1/4 and the probability that a member plays a clarinet is 5/8. If the probability that a member plays both instruments is 5/24, what is the probability that a member plays the guitar or that a member plays the clarinet?

a 1/5 **b** 1/3
c 2/5 **d** 2/3

	S13.2

2 If the probability of rolling a strike at Hamm's Bowling Lanes is 1/6 and the probability of rolling a gutter ball is 2/3, and the probability of rolling a gutter ball that comes out and gets a strike is 1/1000 (very rare), what is the probability that Mr. Hamm will roll a strike or a gutter ball?

a 0.833 **b** 0.832
c 0.725 **d** 0.914

	S13.2

3 Environmentalists have accused a large company in the eastern United States of dumping nuclear waste material into a local river. The probability that either the fish in the river or the animals that drink from the river will die is 11/21. The probability that only the fish will dies is 1/3, and the probability that only the animals that drink from the river will die is 2/7. What is the probability that both the fish and the animals that drink from the river will die?

a 1/21 **b** 13/21
c 2/21 **d** 10/21

	S13.2

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1 Sherman is repairing his car. He has removed the six spark plugs. Four are good and two are defective. He now selects one plug and then, without replacing it, selects a second plug. What is the probability that both spark plugs selected are good?

a 2/5 **b** 1/3
c 3/5 **d** 5/6

	S13.3

2 Sherman is repairing his car. He has removed the six spark plugs. Four are good and two are defective. He now selects one plug and then, without replacing it, selects a second plug. What is the probability that both spark plugs selected are good, knowing that the first plug selected is good?

a 2/5 **b** 1/3
c 3/5 **d** 5/6

	S13.3

3 In Hammville, the probability that a teenager drives a car is 0.90. If the probability that a teenager and their sibling both drive is 0.85, what is the probability that the teenager's sibling drives given that the teenager drives?

a 0.822 **b** 0.944
c 0.875 **d** 0.855

	S13.3

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1 All bags entering a research facility are screened. Ninety-seven percent of the bags that contain forbidden material trigger an alarm. Fifteen percent of the bags that do not contain forbidden material also trigger the alarm. If 1 out of every 1000 bags entering the building contains forbidden material, what is the probability that a bag that triggers the alarm will actually contain forbidden material?

a 0.00097
b 0.00640
c 0.03000
d 0.14550
e 0.97000

S13.4

2 In a certain community the probability that a man over 40 years old is overweight is 0.42. The probability that his blood pressure is high given that he is overweight is 0.67. If a man over 40 years of age is selected at random, what is the probability that he is overweight and that he has high blood pressure?

a 0.28
b 0.44
c 0.43
d 0.52

S13.4

3 A new cleansing product has recently been introduced and is being advertised on television as having remarkable cleansing qualities. The manufacturer believes that if a person is selected at random, the probability that that person watches television and sees the commercial between the hours of 12 noon and 4 P.M. is 4/11. Furthermore, if the person sees the commercial, then the probability that the person will buy the cleanser is 22/36. What is the probability that a person selected at random will watch television and buy the product?

a 0.222
b 0.125
c 0.315
d 0.182

S13.4

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1 If p(A | B) = 1/5, p(A | C) = 2/7, p(B) = 1/2, and p(C) = 1/2, find p(B|A)

a 0.412 **b** 0.589

c 0.562 **d** 0.312

	S13.5

2 If p(A | B) = 1/5, p(A | C) = 2/7, p(B) = 1/2, and p(C) = 1/2, find p(C|A)

a 0.412 **b** 0.589

c 0.562 **d** 0.312

	S13.5

3 A prisoner has just escaped from jail. There are three roads leading away from the jail. If the prisoner selects road A to make good her escape, the probability that she succeeds is 1/4. If she selects road B, the probability that she succeeds is 1/5. If she selects road C, the probability that tshe succeeds is 1/6. Furthermore, the probability that she selects each of these roads is the same. It is 1/3. If the prisoner succeeds in her escape, what is the probability that she made good her escape by using road B?

a 0.125 **b** 0.521

c 0.482 **d** 0.324

	S13.5